

CLAIMS

1. An optical sensor circuit assembly, comprising:
an optically transmissive substrate including filter material; and
an optical imaging element coupled to said substrate.
2. The optical sensor circuit assembly of claim 1, wherein
said filter material is embedded in said substrate.
3. The optical sensor circuit assembly of claim 1, wherein
said filter material is dispersed in said substrate.
4. The optical sensor circuit assembly of claim 1, wherein
said filter material comprises a thin film layer on said substrate.
5. The optical sensor circuit assembly of claim 4, wherein
said thin film layer further comprises material having antireflective properties.
6. The optical sensor circuit assembly of claim 1, further
comprising a circuit member coupled to a first surface of said substrate, said
circuit member defining a plurality of electrically conductive leads.
7. The optical sensor circuit assembly of claim 6, wherein
said optical imaging element includes an integrated circuit and a plurality of
electrically conductive pads, said plurality of pads coupled with corresponding
ones of said plurality of leads.
8. The optical sensor circuit assembly of claim 7, further
comprising a conductive bump disposed between said plurality of leads and
said plurality of pads.
9. The optical sensor circuit assembly of claim 1, further
comprising at least one optical element positioned to direct electromagnetic
radiation through said substrate and filter material and to said optical imaging
element.
10. The optical sensor circuit assembly of claim 9, further
comprising a lens mount supporting said at least one optical element and
coupled to a second surface of said substrate.
11. An optical sensor circuit assembly, comprising:
an optically transmissive substrate;

a thin film optical material coupled to said substrate;
 an integrated circuit having a face including an optical imaging element, said face coupled with at least one of said substrate and said optical material.

12. The optical sensor circuit assembly of claim 11, wherein said thin film optical material comprises at least one of a filter and antireflective material.

13. The optical sensor circuit assembly of claim 11, wherein:

said thin film optical material comprises an antireflective material; and

said optically transmissive substrate comprises a filter material at least one of embedded and dispersed in said substrate.

14. The optical sensor circuit assembly of claim 11, wherein:

said integrated circuit further comprises a plurality of electrically conductive pads; and

said assembly further comprises:

a circuit member coupled to said substrate, said circuit member defining a plurality of electrically conductive leads; and

a plurality of conductive bumps disposed between said plurality of leads and said plurality of pads.

15. The optical sensor circuit assembly of claim 11, further comprising at least one lens positioned to direct electromagnetic radiation through said substrate and filter material and to said optical imaging element.

16. The optical sensor circuit assembly of claim 15, further comprising a lens mount supporting said at least one optical element and coupled to a second surface of said substrate.

17. A method of assembling an optical sensor assembly, comprising the steps of:

providing an optically transmissive substrate;

associating at least one of a filter material and an antireflective material with the optically transmissive substrate; and

coupling an integrated circuit including an optical imaging element with the optically transmissive substrate, and positioning the integrated circuit so that the optical imaging element faces the substrate.

18. The method of claim 17, further comprising the step of coupling a circuit member to the substrate; and wherein the step of coupling an integrated circuit with the optically transmissive substrate includes coupling the optical imaging element to the circuit member using conductive bumps.

19. The method of claim 17, further comprising the steps of coupling an optical element to the substrate using a lens mount.